REMARKS

I. Status of Claims

Prior to entry of this paper, Claims 1-47 were pending. Claims 1-47 were rejected. In this paper, Claims 1, 19, 36, 44, and 47 are amended, no claims are cancelled, and no claims are added. No new matter is added by way of this amendment. For at least the following reasons, it is respectfully submitted that each of the presently pending claims is in condition for allowance.

II. Summaries of the Claimed Invention and the Cited References

To provide context for the following response, the following non-exhaustive summaries are again provided for the claimed invention and the references cited in rejection of the claims.

To summarize one embodiment of the claimed invention, a method of encoding and storing data securely using an n-dimensional entity is disclosed (page 5, lines 28-29 of the specification as originally filed). The n-dimensional entity is generated based on a seed for a random number generator, a number of dimensions of the n-dimensional entity, a length for each dimension of the n-dimensional entity, and bits from a random number generator (Claim 2, page 18, lines 3-26). Changes or movement within the n-dimensional entity are based on a cursor position that resides within the boundaries of the entity (page 11, lines 14-19), directions within the entity (page 14, lines 26-29), and actions pertaining to, but not limited to, movement along a selected plane of the entity, employing another n-dimensional entity, or even flipping the state of a bit in the entity (page 19, lines 13-25). Encoding of plaintext data is performed at the bit level of such data (page 19, lines 7-11). For each bit of plaintext data to be encoded, an iteration of steps is performed (Figure 8, loop based on decision at 804). Each iteration involves the elements of a current cursor position, an action, a direction, and the bit itself that is currently being encoded. The current cursor position is, as noted above, defined in terms of the dimensions of the n-dimensional entity as being within the boundaries of the n-dimensional entity, wherein a current value may be an input from a user or established during encoding (page 11, lines 14-10; page 15, lines 21-26; page 19, lines 20-25). The action may be indexed from a table of actions, using a sequence of bits read from the n-dimensional entity (page 19, lines 13-25). The direction is determined from a sequence of generated bits, which

may be generated as a number sequence (page 19, lines 26-29; page 20, lines 1-2). The bit itself that is currently being encoded is received into the encryption process (Figure 6, page 16, lines 18-22). These elements are collectively employed to search for a bit in the n-dimensional entity that matches the current plaintext bit (page 20, lines 4-12). Using the resulting matching bit's location, an offset count value may be determined by counting the number of bits between the current cursor position and the matching bit's location (page 20, lines 23-25). This offset value is then saved and may serve as a basis for decoding the data (page 20, lines 26-28; page 23, lines 6-9). On the whole, this encryption process provides the benefit of being able protect sensitive information, such as the encryption keys for other computer system security arrangements.

Regarding the applied references, McDonough discloses a data sequence generator for spread spectrum communication comprising stored spreading sequences. McDonough involves storing at least two data sequences in a memory (col. 8, lines 20-24). Generating a second data sequence may involve modifying at least a first data sequence stored in memory (col. 9, lines 41-56). The resulting sequences are utilized in a modulator (1210) to generate the necessary signals for an analog transceiver (1010) (col. 19, lines 35-43).

Zdepski discloses an interactive television system, wherein insert pictures are selectively included in a graphical user interface. Blocks of pixels of an overall image are organized into slices (col. 10, lines 66-67). Inserting an insert picture into an overall image using a map of these slices is further based in offset byte(s), which indicate one or more locations for the insert picture (col. 17, lines 58-65). This offset location data is included in the encoded output that comprises the insert picture (col. 19, lines 7-14).

II. Response to Arguments

The detailed response in the Advisory Action to arguments in the previously filed response are acknowledged and appreciated. Remarks regarding this most recent response are incorporated in the following paragraphs with respect to the particularly applied grounds of rejection.

III. Claim Rejections – 35 USC § 103

Claims 1-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough (US 6,549,563), and further in view of Zdepski et al. (US 6,606,746).

With this paper, Claims 1, 19, 36, 44, and 47 have been amended to clarify the distinction, and thus patentability, of the claimed invention in comparison with the applied prior art. Specifically, these claims have been amended to clarify the manner in which the offset is determined. Support for this amendment can be found throughout the application as originally filed, and particularly on page 17, lines 20-22.

Claim 1, as amended, for example, includes the limitation of:

determining an offset between a cursor position and a match bit within the n-dimensional entity, wherein the match bit is based in part on the action, the direction, and the each bit in the data string, and wherein the offset is determined from the cursor position by performing a search within the n-dimensional entity for a match to the bit in the data string;

After reviewing the teachings of McDonough and Zdepski, it is respectfully submitted that these references neither teach nor suggest at least these limitations of the pending claims as is further discussed as follows. A similar, albeit different, limitation is included in each of the independent claims. If any rejections remain in response to this amendment, particular response is respectfully requested for each of the following positions:

I. <u>The "offset" value of McDonough is based on base stations, not a search</u>. Specifically, offset data in the system of McDonough is based on base station offsets (col. 11, lines 24-28 and 39-43). This indicates that the offset data is determined in a process consistent with, but separate from, its application. This association between an offset and a base station (in Figure 10, for example) precludes the need to regularly determine the offset, including by way of a search within an n-dimensional entity, as is further required by at least Claim 1. This offset data is determined by its intended use, not by a search. In a different component of McDonough, all possible index offsets from a set of index offsets are applied against a received waveform, but this operation is performed

at a separate stage of communication (i.e., as part of demodulation of a received waveform, rather than the data sequence generation discussed in columns 7-13). The operation of Figure 25 does not involve a cursor position and bit of a received data string, but rather a waveform received at a receiver portion of a transceiver (col. 2, lines 61-65; col. 24, lines 24-27). In Zdepski, the byte offsets are simply given, predicated on the established location of a slice, not a search and a match, as required by at least Claim 1 (col. 17, lines 61-65). Accordingly, it is respectfully submitted that McDonough, even in view of Zdepski, does not teach or suggest "wherein the offset is determined from the cursor position by performing a search within the n-dimensional entity for a match to the bit in the data string" as is further claimed in each of the amended claims 1, 19, 36, 44, and 47.

2. <u>Neither "control data", nor "data sequences", nor "user input" of McDonough and Zdepski teach or suggest all claimed aspects of the claimed "data string".</u> In each of Claims 1, 19, 36, 44, and 47, this "data string" is addressed and operated on at the <u>bit-level</u> of the data string. The use of "each bit" in the data string is represented throughout the claims in limitations such as "for each bit in the data string" and "matches the bit of the data string". However, none of the three sets of data cited above, which are listed in the passages cited in the Office Action of Column 13, lines 64-67 of McDonough and lines column 13, lines 49-62 of Zdepski, are disclosed or employed in the same manner as claimed. Details of the "control data", other than its influence on the overall output data sequence selection, are not presented in McDonough (col. 13, lines 64-67). The "data sequences" noted in this passage are the output of the system, not the input upon which the system operations cited in McDonough are predicated (see "generate two data sequences", for example, claim 8, lines 59-61). In fact, it is respectfully submitted that the input for the counters, such as 304, is a simple clock circuit or timing generator, 306, which supplies <u>pulses</u> to the counter, not a data string as claimed in at least Claim 1. And finally, the "user input" of Zdepski is employed to select a picture to be inserted as a background picture for an interactive television display – the bit-level use of such an input is simply not disclosed by Zdepski, nor would it be obvious from the given context for such an element (col. 6, lines 45-65). Again, such differences between the "data string", as further claimed in the claimed invention, and the cited components of McDonough and Zdepski

indicate that the claimed invention, as a whole, is not taught or suggested by these applied references.

3. One of ordinary skill in the art would not logically combine the teachings of McDonough with Zdepski. The "offsets" in the two teachings are unquestionably different. The offset of McDonough pertains to a **time** shifting between a particular and a nominal PN sequence (col. 4, lines 42-45). The offset in Zdepski pertains to a **positional** location in a display (col. 17, lines 28-35). The offsets of McDonough are based on base stations (col. 11, lines 24-28). The offsets of Zdepski are based on locations of pictures (col. 19, lines 27-31). The offsets of McDonough are used to generate a data sequence, while the offsets of Zdepski are used to identify properties of a compressed picture already created. The former pertains to a communication system, the latter pertains to a data structure. Base stations are not equivalent to pictures. At best, these two teachings represent different, distinct "offsets", which do not suggest a same, common "offset" referenced, for example, throughout Claim 1. In light of this difference between McDonough and Zdepski, it is respectfully submitted that one of ordinary skill in the art would not be able to equate these two types of offsets, much less combine these two teachings – again, particularly when the two "offsets" are equated to each other, as is required by the common reference to a single "offset" for each bit in the data string in the claims.

4. The provided rationale for combining the two references of McDonough and Zdepski is improper. The motivation was listed as "because one or more byte offsets indicating locations of each of the one or more slices, preferably pointers to the slice start codes, in the compressed insert picture where this multiplexed stream can then be transmitted to one or more subscriber televisions" (page 6, 2nd paragraph of the Office Action issued September 20, 2007). First, the "generated bit sequence" is equated in the Office Action (at page 4, line 12, for example) in McDonough to the PN sequence stored in the memory 302 and addressed by the counter (col. 8, lines 17-19 of McDonough). The "offset" is equated in the Office Action (at page 4, lines 15-18 of McDonough, for example) to the offset data of McDonough, which in turn references two locations in the stored PN sequence (col. 11, lines 6-9). Thus, any proposed insertion into "a generated bit sequence",

including that of Zdepski, would be made with reference to the PN sequence of McDonough. Attempted interpretation otherwise would explicitly conflict with the limitations of the claims regarding 'an offset", such as included in Claim 1. However, the PN sequence (or its generated form) of McDonough is not directly transmitted; rather, it is used to spread and despread a signal (col. 18, lines 55-60; col. 19, lines 35-39). As such, inserting alternate or additional data, such as the offset location data proposed by way of the modification of Zdepski, would disrupt the use of such a data sequence to "spread" a signal, which again is an explicit property of the communication system of McDonough (col. 1, lines 56-67). Particularly, the insertion of "offset data" or slice location "byte offsets" would unacceptably alter the "pseudo-random noise" nature of the stored and generated PN data sequence. The particular "slice" offset data of Zdepski is clearly not "pseudo-random noise", yet again, this is the type of data to which it would be added by way of the proposed modification. Accordingly, it is respectfully submitted that the motivation is improper, at least so far as it would render the system of McDonough unsuitable for its original purpose.

So far as **Claims 2-18** depend from Claim 1, it is respectfully submitted that the above arguments are also applicable to these claims. For at least these reasons, these claims are submitted as allowable and withdrawal of the rejection(s) of these claims is also hereby requested.

So far as at least some of the limitations cited in the above discussion(s) are also represented in independent **Claims 19, 36, 44, and 47**, it is also respectfully submitted that these claims are not taught or suggested as a whole by the applied references of McDonough and Zdepski. For at least the reasons listed above, these claims and their dependents, such as Claims 20-35 and 45-46, are respectfully submitted as allowable over the prior art of record. Accordingly, withdrawal of the previous rejections under 35 U.S.C. § 103 is respectfully requested.

CONCLUSION

It is respectfully submitted that each of the presently pending claims (Claims 1-47) is in condition for allowance and notification to that effect is requested. Examiner is invited to contact the Applicants' representative at the below-listed telephone number if it is believed that the prosecution of this application may be assisted thereby. Although only certain arguments regarding patentability are set forth herein, there may be other arguments and reasons why the claimed invention is patentable. Applicant reserves the right to raise these arguments in the future.

Dated: January 18, 2008

Respectfully submitted,

By JWiegand

Jamie L. Wiegand
Registration No.: 52,361
DARBY & DARBY P.C.
P.O. Box 770
Church Street Station
New York, New York 10008-0770
(206) 262-8915
(212) 527-7701 (Fax)
Attorneys/Agents For Applicant